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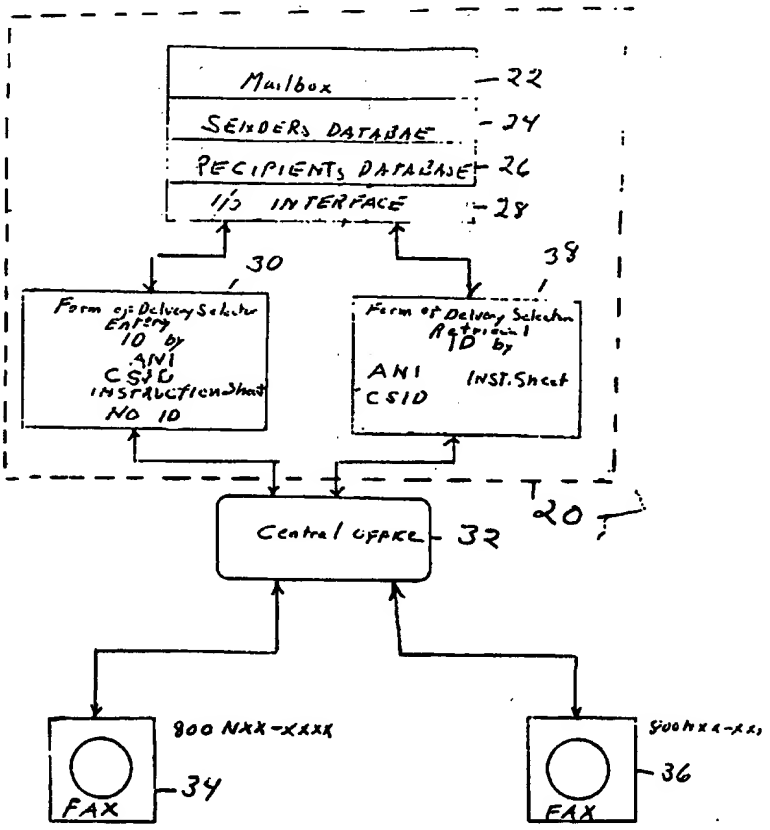
(54) Title: METHOD AND SYSTEM FOR SECURE DELIVERY OF TELEPHONIC INFORMATION

(57) Abstract

A system and method for insuring proper receipt of telephone information, such as voice mail (22) or a fax (34, 36), has several categories of delivery that can be selected by the sender or recipient. The various forms of delivery are simple to the extent that only an access telephone number to the system (20) is required to select the desired form. In two exemplary categories the ANI (30, 38) or the CSID (30, 38) may be used for verification. In another category, an Instruction Sheet (30, 38) may accompany a FAX; and an operator enters the Instruction Sheet information. The recipient dials a particular system number to access the system and obtains delivery by entering the phone number of the recipient. The system permits billing to either the sender or recipient.



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METHOD AND SYSTEM FOR SECURE DELIVERY OF TELEPHONIC INFORMATION

BACKGROUND OF THE INVENTION

FIELD OF THE INVENTION

The present invention relates to the communication of telephonic information; and more particularly to a method and system for insuring that the telephonic information is received as the sender and recipient intend.

While the invention is subject to a wide range of applications, it is especially suited for use in a system and method for transmitting and receiving both voice mail and facsimile documents (FAX), and will be particularly described in that connection.

DESCRIPTION OF RELATED ART

The desired and efficient manner of insuring that telephonic information, such as voice mail or FAX, is received as intended, not only depends on the degree of sensitivity of the information, but also the accessibility and location of the receiving equipment. For some information, neither the sender nor the recipient is concerned with who, beside the intended recipient, has access to the information. For certain information, it is necessary that it be received by equipment at a specific location, and for other information it is imperative that it be received by a specific piece of equipment. Also, there are times when it is advantageous for the recipient to pay for the transmission of the information.

Various methods and systems have been proposed for insuring the security of both voice mail and FAX. However, many such systems require additional equipment, such as scramblers, for example. Such additional equipment is not only expensive, but limits communication of information to parties having similar equipment. Other proposed systems provide a specific protocol for insuring the intended reception of the information, which protocol is complicated, requiring entry of a plurality of number sequences or requires communication between the sender and recipient prior to sending or receiving the FAX. This protocol

is the same regardless of whether the sender or receiver desires reception of the information to be limited to a particular location, a particular item of equipment, or unlimited.

Also, with the advent of portable facsimile machines, a sender or an intended recipient of a FAX containing sensitive information may be traveling; and either the sender or recipient, who does not know the location of the equipment to be used by the other, is desirous of communicating by FAX, it is difficult to insure the confidentiality of the FAX.

In light of the foregoing, there is a need to provide a system and method for insuring the intended destination of telephonic information that has simplicity of delivery; is able to provide different forms of delivery for the transmitted information depending on the requirements of the sender and intended recipient; and is able to insure that receipt of the information will be as intended, when received at a location unknown to the sender or recipient at the time of transmission of the information by control of the equipment being used.

SUMMARY OF THE INVENTION

Accordingly, the present invention is directed to a system and method for insuring the receipt of telephonic information that substantially obviates one or more of the problems due to limitations and disadvantages of the related art.

Additional features and advantages of the invention will be set forth in part in the description which follows; and in part will be apparent from the description, or may be learned by practice of the invention. The objects and advantages may be realized and attained by means of the instrumentalities and combinations particularly pointed out in the appended claims.

To achieve the advantages and in accordance with the purpose of the invention, as embodied and described broadly herein, the system for insuring receipt of telephonic information by a recipient as intended by a sender of the information includes a store and forward switch mechanism having a mailbox portion for the storage of telephonic information for delivery, a recipient database portion including active transactions and a plurality of forms of delivery, and a sender database portion for

storing sender activity including tracking and billing data; means including the recipient database portion for selecting one of said plurality of forms of delivery upon entry of one of a corresponding plurality of access numbers by a senders equipment for connecting the senders equipment to the store and forward switch mechanism; means for storing the telephonic information and the selected form of delivery upon entry of an address of the recipient and the information to be delivered; means including the mailbox portion for selecting one of the forms of delivery upon entry of one of a corresponding plurality of access numbers for connecting the recipients equipment to the store and forward switch; and means for transmitting the stored telephonic information to the connected recipients equipment in response to the address of the recipient.

In another aspect, the invention is a method of insuring receipt of telephonic information by a recipient as intended by a sender of the information in a system having a store and forward switch mechanism with a plurality of different forms of delivery of the information. The method includes the steps of entering an access number in the senders equipment corresponding to one of the plurality of forms of delivery for connecting the senders equipment to the store and forward switch mechanism; determining the validity of the senders equipment; entering the telephone number of the intended recipient in store and forward switch mechanism; storing the entered information in a memory portion of the store and switch mechanism; entering the access number in the recipient equipment corresponding to a selected form of delivery for connecting the recipient equipment to the store and forward switch mechanism; and delivering the stored information to the connected equipment of the recipient in response to determination of validity of the recipient equipment.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings, which are incorporated in and constitute a part of this specification, illustrate an embodiment of the invention, and, together with the description serve to explain the principles of the invention.

Fig. 1. is a schematic block diagram of one embodiment of a system in accordance with the present invention;

Fig. 2 is a flow chart illustrating the steps in entering the information to be delivered by using ANI in accordance with the present invention;

Fig. 3 is a flow chart illustrating the steps in entering the information to be delivered by using an instruction sheet accompanying a FAX in accordance with the present invention;

Fig. 4 is a flow chart illustrating the steps in entering the information to be delivered by using CSID in accordance with the present invention;

Fig. 5 is a flow chart illustrating the steps in entering the information to be delivered without requiring identification in the system of the present invention;

Fig. 6 is a flow chart illustrating the substeps in the transaction script block for entering the information to be delivered in accordance with the present invention;

Fig. 7 is a flow chart illustrating the steps in retrieving the mailbox information by using ANI in accordance with the present invention; and

Fig. 8 is a flow chart illustrating the steps in retrieving the information by using the CSID in accordance with the present invention.

DETAILED DESCRIPTION

Reference will now be made in detail to the present preferred embodiment of the invention, an example of which is illustrated in the accompanying drawings.

The system for insuring receipt of telephonic information by a recipient as intended by a sender and recipient of the information of the present invention comprises a store and forward switch mechanism having a mailbox portion for the storage of telephonic information for delivery, a recipient database portion including active transactions and a plurality of forms of delivery, and a sender database portion for storing sender activity including tracking and billing data. As herein embodied and referring to Fig. 1 a store and forward switch

mechanism is contained within dashed lines referred to as 20. The mechanism 20 has a mailbox portion 22, a senders database portion 24, a recipient database portion 26, and an interface section 28.

In accordance with the present invention, the system includes means including the recipient database portion for selecting one of a plurality of forms of delivery upon entry of one of a corresponding plurality of access numbers by a senders equipment for connecting the senders equipment to the store and forward switching mechanism of the system. As herein embodied, the categories are selected by the sender in accordance with the access number selected for connecting the users equipment to the store and forward mechanism of the system. This mechanism 20 may be accessed by an 800, a 700, a 900, or a local number, for example, with one or more digits in the seven digit number dedicated to a particular delivery category of the system. This number is referred to as the access or system access number.

As herein embodied, the mechanism 20 includes a form of delivery selector 30 connecting the interface section 28 through a central telephone office 32 to users telephonic equipment 34 and 36. The delivery selector 30 includes a plurality of delivery categories or forms of delivery required as a prerequisite to storing the FAX contents in the mailbox portion 22.

In accordance with the invention, the system includes means for storing the telephonic information and the selected form of delivery upon entry of information corresponding to the selected form of delivery and the information to be delivered. In the present embodiment, the categories able to be selected by a subscriber who wishes to store voice mail or a FAX for subsequent retrieval are as follows. A first category ANI, requires only that the sender access the mechanism 20 through the central office 32 by using an access number that corresponds to this particular category followed by the recipients telephone number. The term ANI, which is well known in the art, refers to an automatic identification number, usually the call originators number that is used by the central office for identifying and

billing a station. A second form of delivery is referred to as CSID, which is also a well known term that refers to a calling station identifier, that identifies a specific FAX machine. This number accompanies the entry of the facsimile document and is printed on the FAX. This category also merely requires the dialing of the access number and the recipients phone number to store the FAX. A third form of delivery that may be selected by the system is referred to as ID by Instruction Sheet. This category, which is particularly useful for travelers, merely requires that a separate instruction sheet be attached to the FAX document. This instruction sheet could include a requirement by an operator identifying the sender or receiver as a condition precedent for delivering the FAX. A fourth form of delivery is used where the identity, authentication of the sender, and billing information are unnecessary. However, reception requires identification of the receiving equipment. Thus, it provides confidential capability independent of the nature of the sender.

In accordance with the invention, the store and forward switch mechanism has means including the mailbox portion for selecting one of the forms of delivery upon entry of one of a corresponding plurality of access numbers for connecting the recipient equipment to the store and forward switch. As embodied herein and as shown in Fig. 1 a form of delivery selector referred to as 38 connects the interface 28 of the mechanism 20 to a users telephonic equipment through the telephone central office 32.

Similar to the selector 30, the form of delivery selector 38 includes means for selecting one of the plurality of forms of delivery upon entry of one of a corresponding plurality of access numbers by the recipient equipment for connecting the recipient equipment to the store and forward switching mechanism. The categories are selected by the recipient in accordance with the system access number selected for connecting the users equipment to the store and forward mechanism. For the recipient, access may also be obtained by dialing a system access number, for example, with one or more digits in the seven digit number dedicated to a particular delivery category.

The system, according to the invention, includes means for transmitting the stored telephonic information to the connected recipients equipment in response to the determination of the validity of the recipient. As herein embodied, the selector 38 includes a plurality of delivery categories similar to selector 30. The plurality of delivery categories exist to match the capabilities of the individual sending or receiving equipment. Regardless of whether the recipient telephone number, herein referred to as an address, is entered by the use of ANI or CSID, or an instruction sheet, once the sender has accessed the system, the destination address is the telephone number of the intended recipient. For either of these delivery categories, the recipient is only required to dial the access number of the system which corresponds to the equipment being used to retrieve the information. The system will recognize the ANI or CSID as the case may be. For the third category, the recipient may follow the same procedure for accessing the system in accordance with the capabilities of the equipment and either follow the instructions of the sender or procedures followed by the general mailbox access as specified by the system provider. For the fourth category where no identification is required for the sender, it is assumed that confidential mailbox delivery is being sent to a recipient who will accept the delivery charges for the entire transaction, and who does not care to have the sending parties identify further validated

Prior to discussing the details of implementing the individual delivery categories, a description of the use of the overall operation of the system is described in connection with the initial selection of ANI as a delivery category. A caller wishing to send a confidential FAX message to a recipient would dial a sending system access, for example, that would access the store and forward mechanism selecting ANI as the delivery category. On connecting with the system access number, the telephone network would forward the senders dialing number (ANI), and the system of the present invention would identify the sender as a subscriber, or in the situation where a non-subscriber input is permitted, the system would record the senders number for

billing purposes. In the event that an ANI was unavailable because the sender was not a subscriber to the system, a calling station identifier CSID in the case of a FAX could be used to identify the sending equipment for database and authentication purposes. Once authorized to use the system, the sender would be presented with a voice prompt script which would allow the user to select the telephone number of the derived recipient equipment. On completing the selection, the system would present a FAX tone, and the sender would place the machine in the send mode.

To actually receive the FAX, the recipient would call the appropriate system access number. The system would use the callers number (ANI) to determine the identity of the recipient, and would scan the recipients mailbox storage for documents to deliver to that number. The user could then choose to receive FAXES and activate the machine. This allows any person with access to the line to receive FAXES from the mailbox, which requires an operator to request additional identification as previously described. As previously mentioned with respect to the sender, if ANI is not available from the recipients machine, the FAX subscriber identification may be used to identify the caller to the system. This would require that the transmitting subscriber identifier (TSI) be set to the value of the target phone number.

For each of the categories, it is to be noted that the system permits either the sender or recipient to be billed for the transaction. This may be implemented by several different methods. One is by prearrangement with the service provider that all transactions from identified sending equipment are to be billed to the recipient equipment, for example, or a particular transaction can be billed by prearrangement. The fourth category as hereinafter described allocates the charges to the recipient when the recipients equipment is validated either by ANI, or CSID, for example. However, there also could be an additional system access number that would be used by a sender and/or recipient when charges are to be reversed.

The means for implementing the forms of delivery may include conventional microprocessors associated with the various databases of the store and forward switch mechanism that are either programmed in firmware or software. Referring to the flowchart of Fig. 2, the method of using ANI to send a message is initiated at step 40. The subscriber equipment identification is obtained from the sender database at step 42. A decision is then made at step 44, to determine whether or not the station is valid. If the answer is no, the transaction is terminated. If the answer is yes, the transaction script is executed at step 46. At the completion of the transaction script, the system provides a FAX tone at step 48 and receives the FAX document and protocol from the sender at step 50. The FAX is then routed to the mail box at step 52 based on the address of the recipient. The system then produces the billing for the sender and records the transaction at step 54.

Reference is now made to Fig. 6, which details the steps of the transaction script at step 46 of Fig. 2. After the validity of the user is determined at step 44, the sender receives a prompt to provide the telephone number of the party to receive the FAX at step 56. The system then reads the number entered by the sender by reading Dual Tone Multi Frequency signals, to determine the destination of the message. Then, the transaction is completed as determined at decision block 60, then the routine returns to step 48 as previously described in connection with Fig. 2. The transaction script 46 is used with every delivery category of the system for entering the recipients telephone number.

The transaction script 46 allows for the entry of address (recipients telephone number) and option information from the sender. This script could be managed by voice prompts or tones. This script may be extended to allow for a wide range of options, or be fairly simple as illustrated in Fig. 6 herein. Various predefined entries may allow for correction of incorrect entries, and permit early termination of this script and immediate document routing. Such features would facilitate automation of the interaction with the user.

Referring to Fig. 3, when the deliver category requires identification by the Instruction Sheet, a FAX tone is provided at step 72. The system accepts the incoming FAX without any further processing at step 74 and places it in a QUEUE at step 76 for operator attention. An operator removes the item from the QUEUE and displays the cover sheet on a terminal. The operator reads the customer ID, enters it into a validation menu at step 80 and the system retrieves the subscriber records. If the user is determined not to be valid at step 82 the transaction is cancelled, otherwise the operator transcribes the address information into an addressing menu at step 84 and dispatches the transaction to the system for processing as in the previous delivery categories, after first removing the cover sheet from the transmission as indicated at step 86. The routine then continues over line 88 to execute step 52 and 54 of Fig. 2.

Where ANI is not available, and the automated verification is desirable, the FAX machine internal user identifier, referred to as a CSID, can be used for machine identification. This user configurable field is normally set to the station's phone number, and so would return the same value as the ANI in the previous category. After connection to the system at step 89, the transaction script is carried out at step 46 as previously described in connection with Fig. 6. Referring to Fig. 4, the system provides a FAX tone at 90 and transmission of the FAX would being, with the CSID being sent as one of the first elements of the protocol as indicated at step 92. At this stage in the method, there is nothing to cancel the input of the FAX document as indicated at step 94. In parallel with the reception of the incoming FAX, a validity check would be made on this subscriber based on the CSID field contents and the subscriber information retrieved at step 96. If the field is not valid at step 98, the transaction is cancelled at step 100 and the system goes to an exit branch. If the user is valid, the system goes to an exit branch. If the field was not valid, or the information not available as indicated at step 102, by the time the call was complete, the transaction would be terminated. If the call had not been completed and the transaction had not been cancelled at

decision block 104, then the further protocol and the FAX document would continue to be received at step 106. Upon validation of the users equipment, the routine is completed over line 88 to execute the steps 52 and 54 of Fig. 2 as previously described.

In the final input category, no sender identification is required. This would be used for sending voice mail confidential FAXES or voice mail to subscribers where the subscriber would accept the transaction charged and the identify, authentications, and billing information of the sender is unnecessary. In this case a user would immediately be presented with a transaction script as in previous cases. The FAX would be received by this system and routed as in previous cases.

Referring to Fig. 5, where no ID by the sender is required, a transaction script at step 47 is immediately executed and the subscribers information for recipient is obtained from the data base at step 110. If the receiver is valid as decided at block 112, the process skips to Fig. 2 over line 69 to execute the steps 48, 50, 52, and 54 as previously described.

The detailed method steps are described for obtaining delivery of the stored documents by the recipient in connection with Figures 7 and 8. Referring to Fig. 7, the recipient selects the delivery category where ANI will be used at step 116. The recipient mailbox information is obtained from the data base based on ANI as indicated at step 118. If it is a valid recipient mailbox, then the FAX is retrieved at step 120 for transmission with a summary cover page. After the FAX is retrieved at step 120, a FAX tone is presented at step 128 and the recipient receives the FAX at step 130. Delivery is recorded, the mailbox is purged and the billing record is made at step 132.

Referring Fig. 8, when ANI is not available, the CSID may be substituted to identify the receiver. Upon selection of CSID, a FAX tone is generated at step 146. Since the identification is not available until the FAX transaction starts, auxiliary information needs to be taken first. Therefore, the initial protocol and the CSID is received at step 148. Further

protocol is received at step 150. Note that a parallel process is used to retrieve mailbox information using CSID at step 152 while the beginning of the cover sheet is being sent at step 154. This is done because of the very short tolerance in the FAX protocol. Thus, at decision block 156 if it is determined that the mailbox if not valid then the cover sheet is updated with a "no mail message" and set the page count to 1. If the mailbox is valid, the mailbox FAX contents are retrieved at step 160; and the summary information for the FAX cover sheet is updated together with the page count being set at step 162. Next, the cover sheet is completely sent at step 164. After the cover sheet has been sent, the page count of the FAX is determined at decision block 166; and if it is greater than 1 which indicates that the cover sheet page count was set at 162, then the FAX pages which were retrieved are sent to the recipients FAX machine at step 168.

If the FAX was sent according to the Instruction Sheet category, it would be accessed by the recipient by using the appropriate 800 number. The sending and receiving methods are as appropriate to the type of line (ANI capability), the type of equipment (whether CSID has been appropriately set, and the level of security required by the transaction. In general, the sender will specify the number to be dialed by the recipient and the procedure to be followed. This will typically be accomplished by pre-arrangement.

In summary, the method and system of the present invention involves the calling party station sending information to a receiving party station through a store and forward switch mechanism having a plurality of delivery categories that may be selected in a simple manner in accordance with the type of information being sent and the circumstances under which it may be retrieved. The sender may transmit this information to more than one party at a time by designating those parties through the first parties message into the store and forward switch mechanism. The sending party transmits the information to the store and forward switch mechanism along with billing information which is generally the ANI of the sending party or other such

billing information as necessary to bill the call. For information being sent by a FAX machine, the billing information may be the ANI and/or the CSID of the FAX terminal. Also, the sending party sends the ANI and/or the CSID of the FAX terminal of the recipient's to the telephone number of the recipient. The recipient having knowledge of the transmission by the sender will dial into appropriate store and forward switch mechanism delivery selector and the recipients will automatically receive the information that is designated for them by the matching of their ANI and/or CSID. The billing for sending and retrieving the information may be to either party as previously described.

It will be apparent to those skilled in the art that various modifications and variations can be made in the system and method of the present invention without departing from the scope or spirit of the invention. Thus, it is intended that the present invention cover the modifications and variations of this invention provided they come within the scope of the appended claims and their equivalents.

WHAT IS CLAIMED IS:

1. A system for insuring receipt of telephonic information by a recipient as intended by a sender of the information, comprising:

a store and forward switch mechanism having a mailbox portion for the storage of telephonic information for delivery, a recipients database portion including active transactions and a plurality of forms of delivery, and a sender database portion for storing sender activity including tracking and billing data;

means including the recipients database portion for selecting one of said plurality of forms of delivery upon entry of one of a corresponding plurality of access numbers by a senders equipment for connecting the senders equipment to the store and forward switch mechanism;

means for storing the telephonic information and the selected form of delivery upon entry of the recipients telephone number and the information to be delivered;

means including the mailbox portion for selecting one of the forms of delivery upon entry of one of a corresponding plurality of access numbers for connecting the recipients equipment to the store and forward switch; and

means for transmitting the stored telephonic information to the connected recipient in response to the determination of the validity of the recipient.

2. The system of claim 1 wherein the selected form of delivery, comprises:

means for storing a FAX, having a cover page containing recipient instructions, and in addition at least one other page containing the information to be delivered,

means for queuing the stored fax to an operator for entering sender identification;

means for entering a sender identification into the sender database portion of the store and forward switch mechanism,

means for transmitting the stored telephonic information to the connected recipients equipment upon entry of the access number corresponding to the recipients equipment.

3. A system for insuring receipt of telephonic information by a recipient as intended by a sender of the information, comprising:

a store and forward switch mechanism having a mailbox portion for the storage of telephonic information to be delivered;

means responsive to entry of an access number connecting the sending equipment to the store and forward switch mechanism for determining the authority of the sending equipment to use the system in accordance with an automatic number identifier (ANI) of the sender;

means responsive to a determination that the sending equipment is an authorized user for permitting the entry of the destination number of the recipient equipment;

means responsive to entry of the destination number for transmitting telephonic information to the mailbox portion with a corresponding address;

means responsive to the entry of an access number connecting the recipient equipment to the store and forward switch mechanism for determining the authority of the recipient equipment to use the system in accordance with an automatic number identifier (ANI) of the recipient; and

means responsive to a determination by the automatic number identifier of the recipient that the recipient equipment is an authorized user of the system for transmitting the telephonic information to the recipient equipment.

4. The system of claim 3 wherein the telephonic information is a FAX.

5. The system of claim 1 wherein the selected form of delivery, comprises:

means for responsive to entry of the access number by the sender for determining the authority of the sending equipment to use the system in accordance with an automatic number identifier ANI of the sender;

means responsive to the entry of the access number by the recipient equipment for determining the authority of the

recipient equipment to use the system in accordance with an automatic number identifier (ANI) of the recipient;

means responsive to the determination of authority of the sending equipment for permitting entry of the destination address of the recipient; and

means responsive to the determination of authority of the recipient equipment in accordance with the ANI for transmitting the telephonic information to the recipient equipment.

6. The system of claim 5 wherein the means for validating the recipients equipment includes means for billing the recipients equipment in accordance with one of the ANI and CSID.

7. The system of claim 1 wherein the selected form of delivery, comprises:

means ~~for~~ responsive to entry of the access number by the sender for determining the authority of the sending equipment to use the system in accordance with the (CSID) of the sending equipment;

means responsive to the entry of the access number by the recipient equipment for determining the authority of the recipient equipment to use the system in accordance with the (CSID) of the recipient equipment;

means responsive to the determination of authority of the sending equipment for permitting entry of the destination address of the recipient; and

means responsive to the determination of authority of the recipient equipment for transmitting the telephonic information to the recipient equipment at the designated address.

8. A method of insuring receipt of telephonic information by a recipient as intended by a sender of the information in a system having a store and forward switch mechanism with a plurality of different forms of delivery of the information, comprising the steps of:

entering an access number in the senders equipment corresponding to one of the plurality of forms of delivery for connecting the senders equipment to the store and forward switch mechanism;

determining the validity of the senders equipment;

entering the telephone number of the intended recipient in the store and forward switch mechanism corresponding (and) the information to be delivered;

storing the entered information in a memory portion of the store and forward switch mechanism;

entering a number in the recipients equipment corresponding to a selected form of delivery for connecting the recipients equipment to the store and forward switch mechanism; and

delivering the stored information to the connected equipment of the recipient in response to the determination of validity of the recipient.

9. The method of claim 8 wherein the step of determining the validity of the recipient includes billing the delivery of the information to the recipient equipment.

10. The method of claim 8 wherein the step of storing the entered information includes storing a FAX, having a cover page containing an Instruction Sheet designation, and in addition at least one other page containing the information to be delivered, and the selected form of delivery includes queuing the stored fax to an operator for entering sender identification;

entering the sender identification in the sender database portion of the store and forward switch mechanism;

transcribing the Instruction Sheet and;

transmitting the stored telephonic information to the connected recipients equipment upon compliance with instructions given recipient by an operator.

11. A method for insuring receipt of telephonic information by a recipient as intended by a sender of the information, comprising:

providing a store and forward switch mechanism having a mailbox portion for the storage of telephonic information to be delivered;

entering an access number connecting the sending equipment to the store and forward switch mechanism;

determining the authority of the sending equipment to use the system in accordance with an automatic number identifier (ANI) of the sender;

permitting the entry of the destination number of the recipient equipment in responsive to a determination that the sending equipment is an authorized user;

transmitting telephonic information to the mailbox portion with a corresponding address in response to entry of the destination number of the recipient;

entering an access number connecting the recipient equipment to the store and forward switch mechanism for determining the authority of the recipient equipment to use the system in accordance with an automatic number identifier (ANI) of the recipient; and

transmitting the telephonic information to the recipient equipment in response to a determination by the automatic number identifier (ANI) of the recipient that the recipient equipment is an authorized user of the system.

12. The method of claim 8 wherein the steps of transmitting telephonic information includes transmitting a FAX.

13. The method of claim 8 wherein the selected form of delivery, comprises the steps of:

determining the authority of the sending equipment to use the system in accordance with an automatic number identifier (ANI of the sender);

determining the authority of the recipient equipment to use the system in accordance with an automatic number identifier (ANI) of the recipient;

permitting entry of the destination address of the recipient upon determination of the authority of the sender to use the system; and

transmitting the telephonic information to the recipient equipment upon the determination of authority of the recipient equipment.

14. The system of claim 8 wherein the selected form of delivery, comprises determining the authority of the sending equipment to use the system in accordance with a (CSID) of the sending equipment;

permitting entry of the destination address number of the recipient upon the determination of the authority of the sending equipment to use the system;

determining the authority of the recipient equipment to use the system in accordance with a (CSID) of the recipient equipment; and

transmitting the telephonic information to the recipient equipment upon the determination of authority of the recipient equipment to use the system.

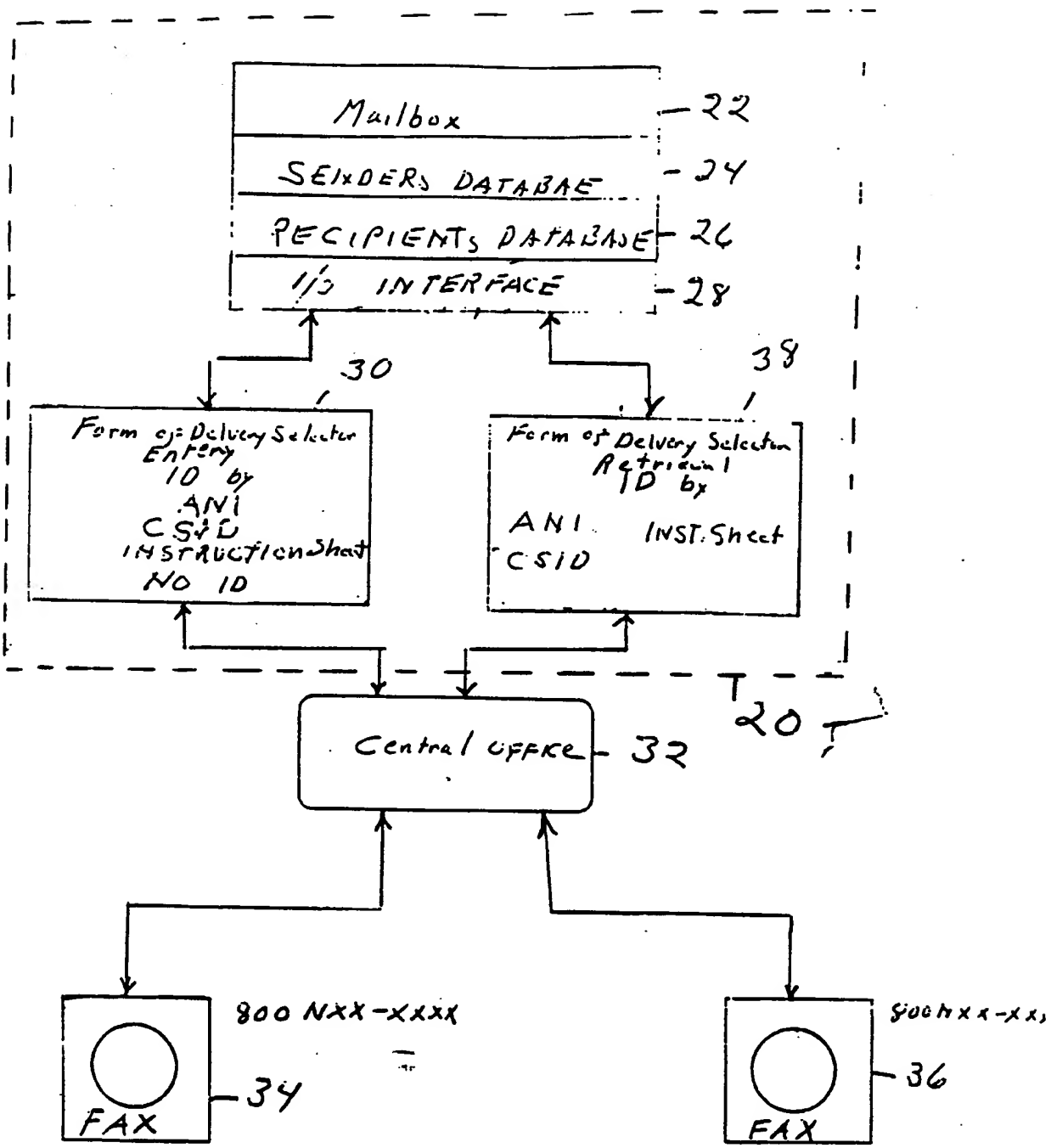
Mailbox
22
SENDERS DATABASE
24
RECIPIENTS DATABASE
26
I/O INTERFACE
28
30
38
Form of Delivery Selection Entery ID by ANI CSID INSTRUCTION Sheet NO ID
Form of Delivery Selection Retrieval ID by ANI CSID INST. Sheet
20
Central OFFICE
32
800 NXX-XXXX
FAX
34
900 NXX-XXXX
FAX
36

Fig. 1

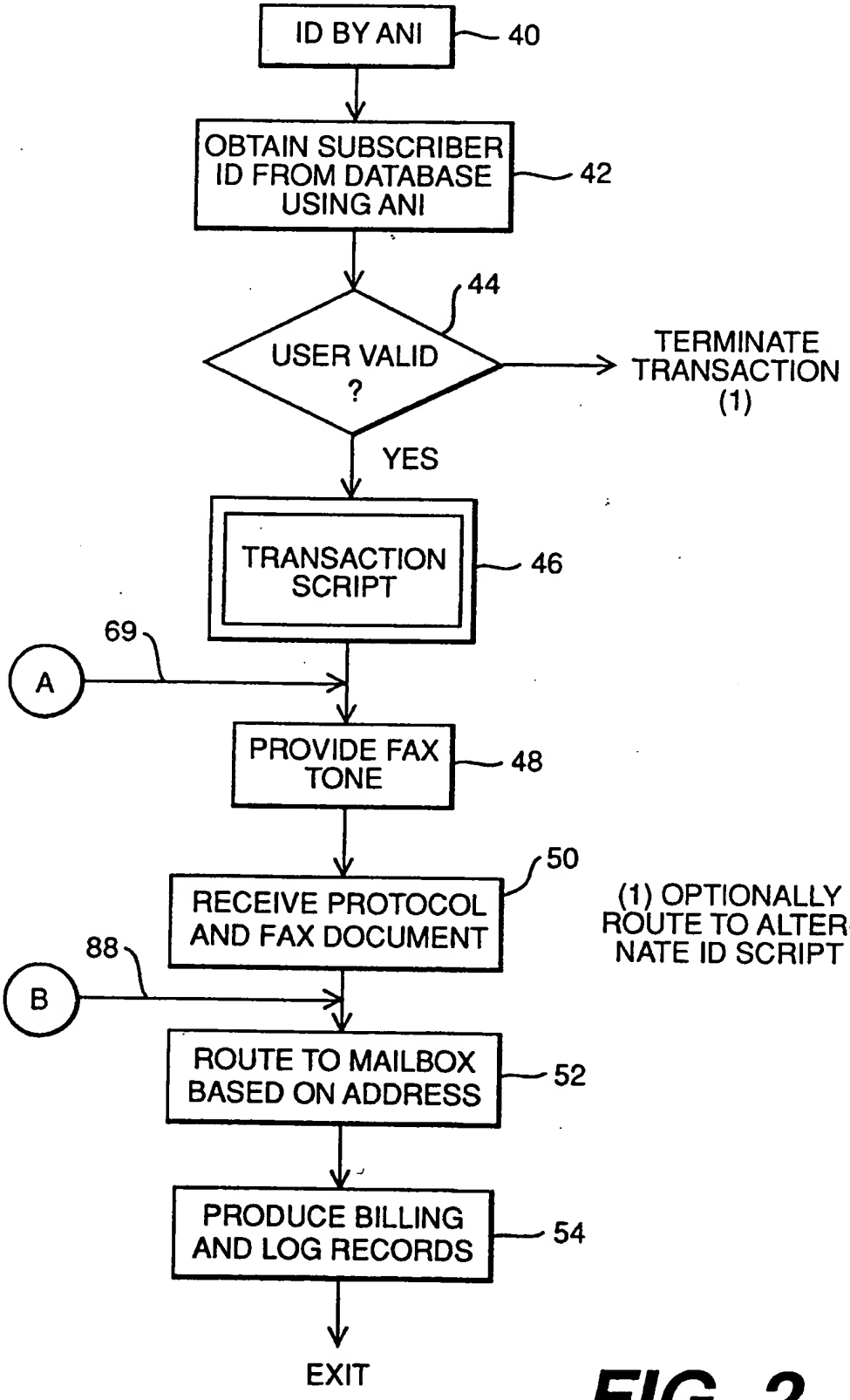
ID BY ANI
40
OBTAIN SUBSCRIBER ID FROM DATABASE USING ANI
42
44
USER VALID ?
TERMINATE TRANSACTION (1)
YES
TRANSACTION SCRIPT
46
69
A
PROVIDE FAX TONE
48
50
RECEIVE PROTOCOL AND FAX DOCUMENT
(1) OPTIONALLY ROUTE TO ALTER-NATE ID SCRIPT
88
B
ROUTE TO MAILBOX BASED ON ADDRESS
52
PRODUCE BILLING AND LOG RECORDS
54
EXIT

FIG. 2

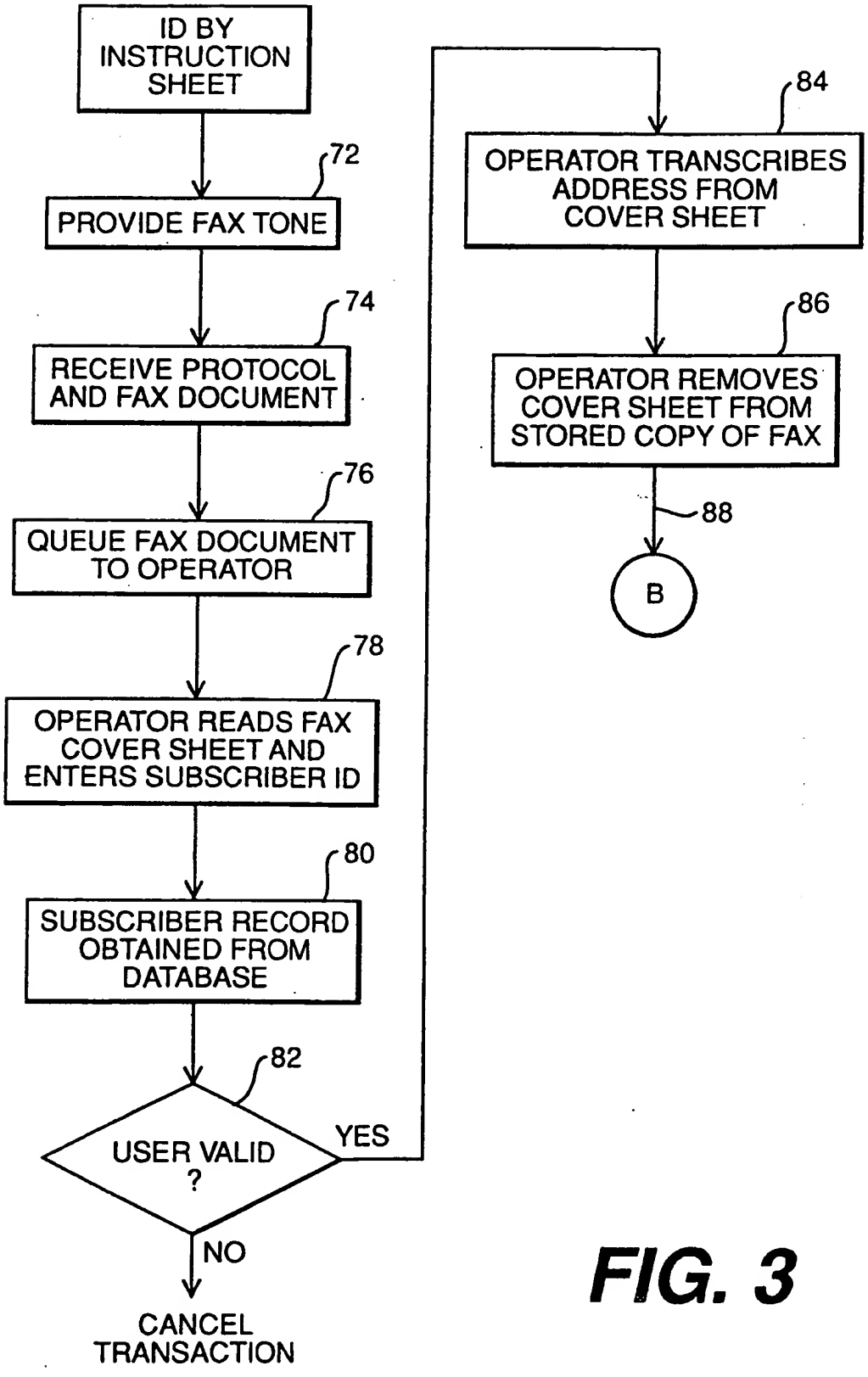
ID BY INSTRUCTION SHEET
72
PROVIDE FAX TONE
74
RECEIVE PROTOCOL AND FAX DOCUMENT
76
QUEUE FAX DOCUMENT TO OPERATOR
78
OPERATOR READS FAX COVER SHEET AND ENTERS SUBSCRIBER ID
80
SUBSCRIBER RECORD OBTAINED FROM DATABASE
82
USER VALID ?
YES
NO
CANCEL TRANSACTION
84
OPERATOR TRANSCRIBES ADDRESS FROM COVER SHEET
86
OPERATOR REMOVES COVER SHEET FROM STORED COPY OF FAX
88
B

FIG. 3

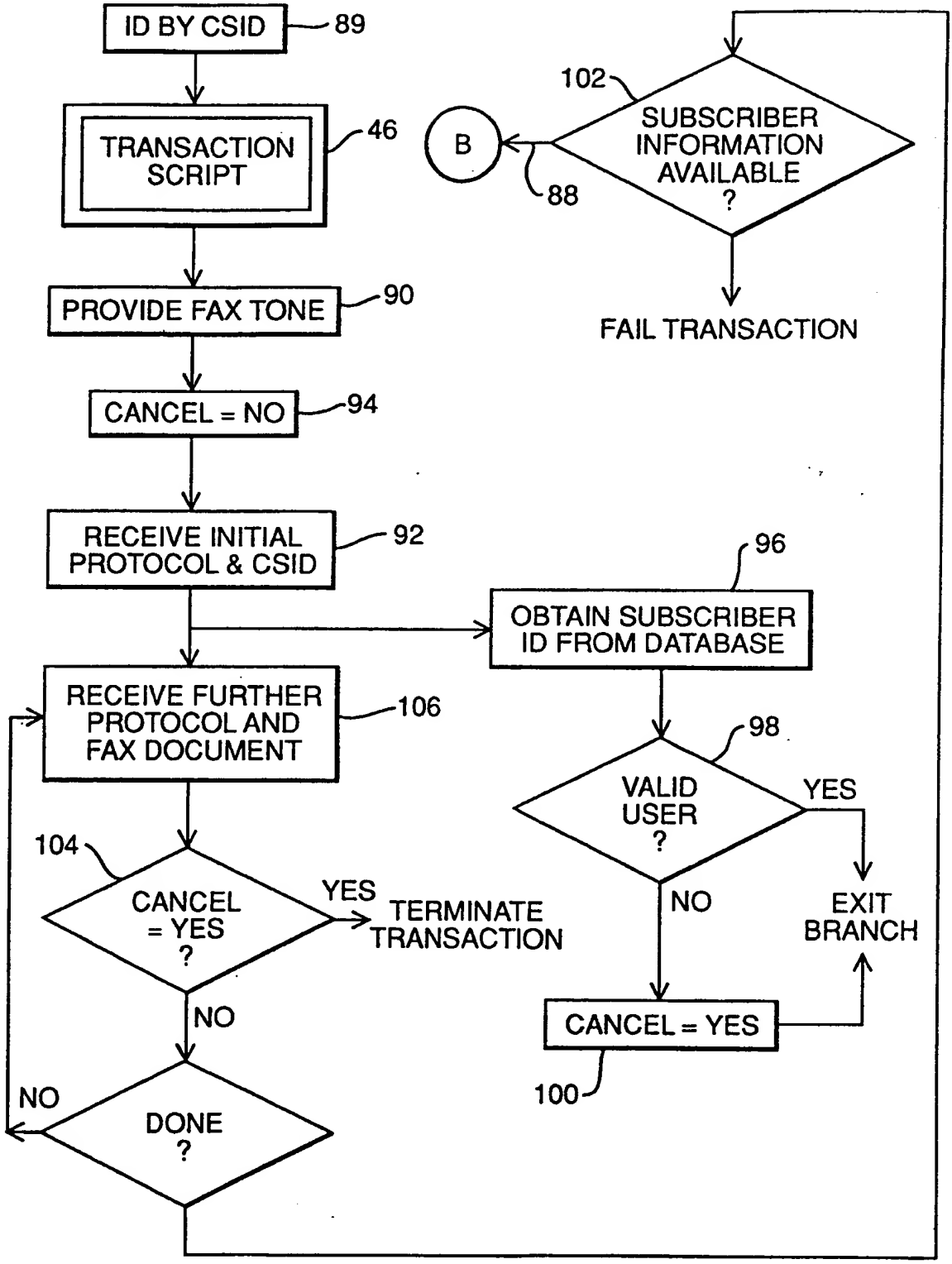
ID BY CSID
89
TRANSACTION SCRIPT
46
PROVIDE FAX TONE
90
CANCEL = NO
94
RECEIVE INITIAL PROTOCOL & CSID
92
RECEIVE FURTHER PROTOCOL AND FAX DOCUMENT
106
104
CANCEL = YES ?
YES
TERMINATE TRANSACTION
NO
DONE ?
NO
B
102
SUBSCRIBER INFORMATION AVAILABLE ?
88
FAIL TRANSACTION
96
OBTAIN SUBSCRIBER ID FROM DATABASE
98
VALID USER ?
YES
NO
EXIT BRANCH
CANCEL = YES
100

FIG. 4

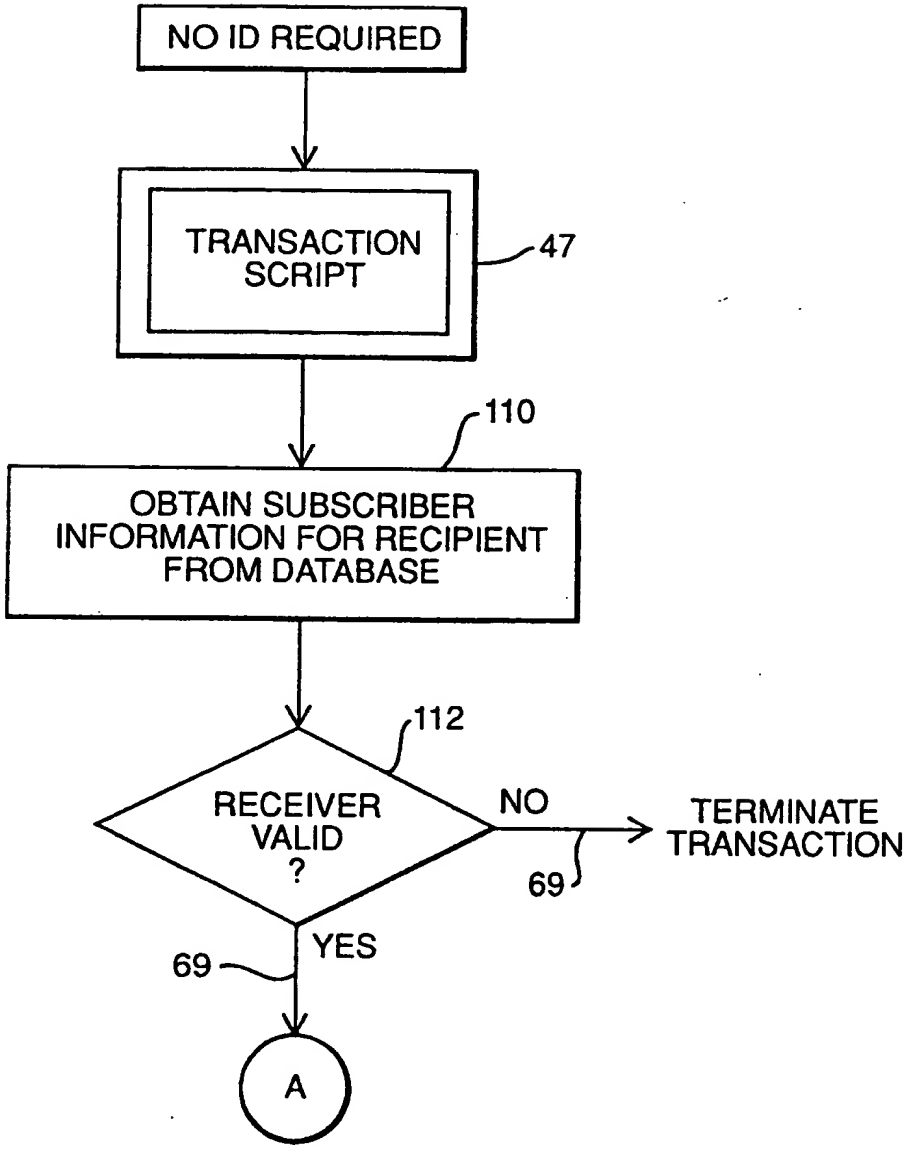
NO ID REQUIRED
TRANSACTION SCRIPT
47
110
OBTAIN SUBSCRIBER INFORMATION FOR RECIPIENT FROM DATABASE
112
RECEIVER VALID ?
NO
TERMINATE TRANSACTION
69
YES
69
A

FIG. 5

TRANSACTION SCRIPT

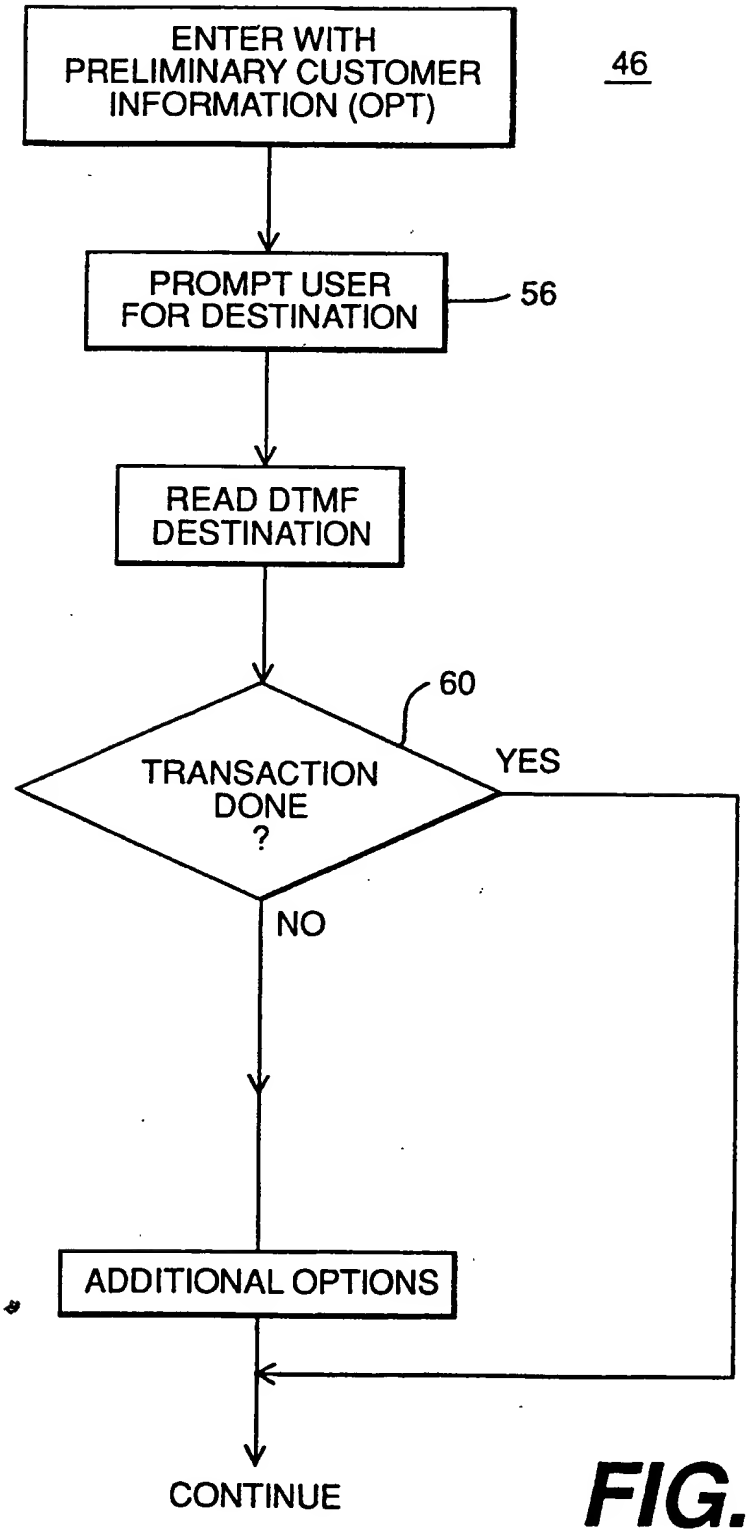

FIG. 6

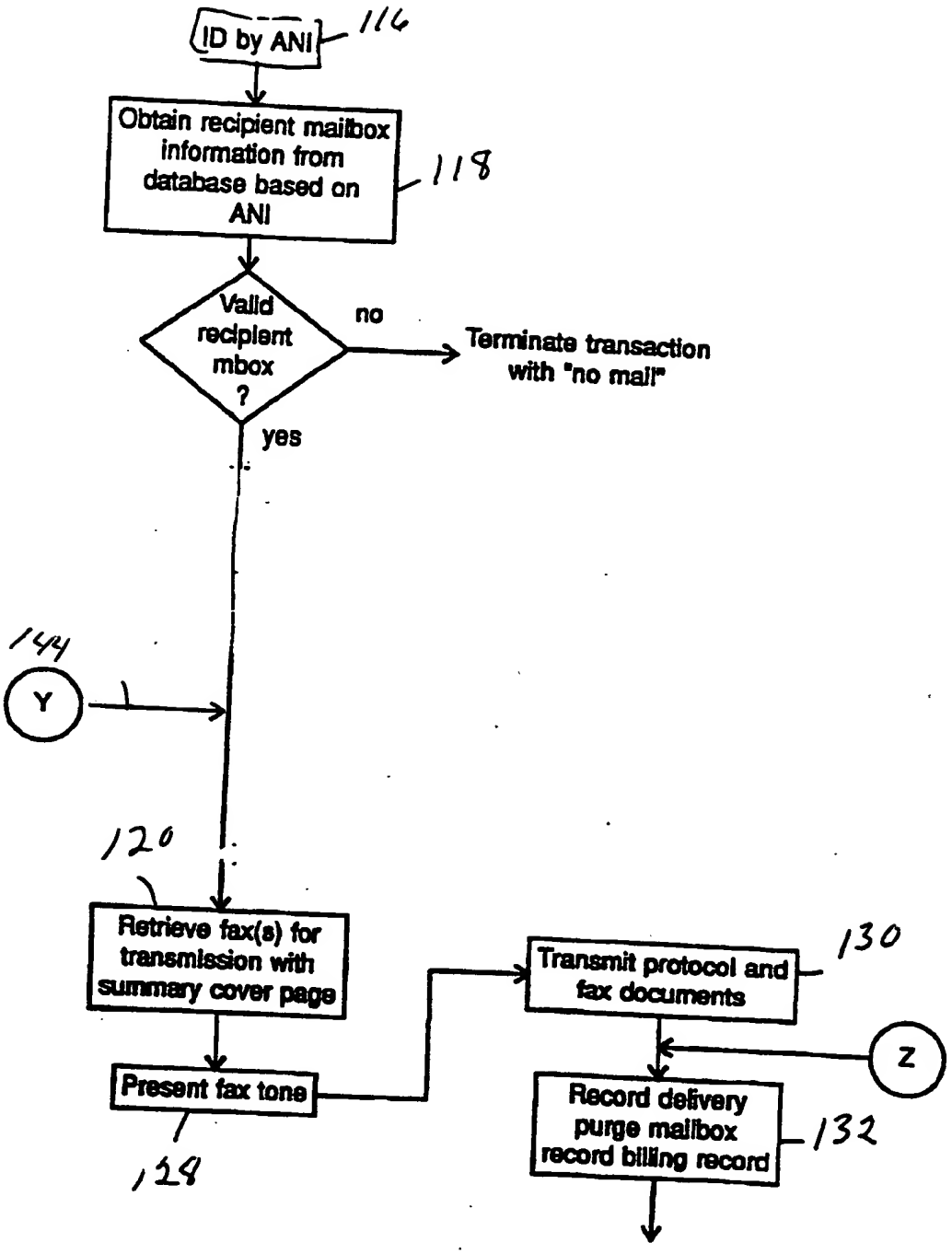
ID by ANI
116
Obtain recipient mailbox information from database based on ANI
118
Valid recipient mbox ?
no
Terminate transaction with "no mail"
yes
144
Y
120
Retrieve fax(s) for transmission with summary cover page
Present fax tone
124
Transmit protocol and fax documents
130
Z
Record delivery purge mailbox record billing record
132

Fig. 7

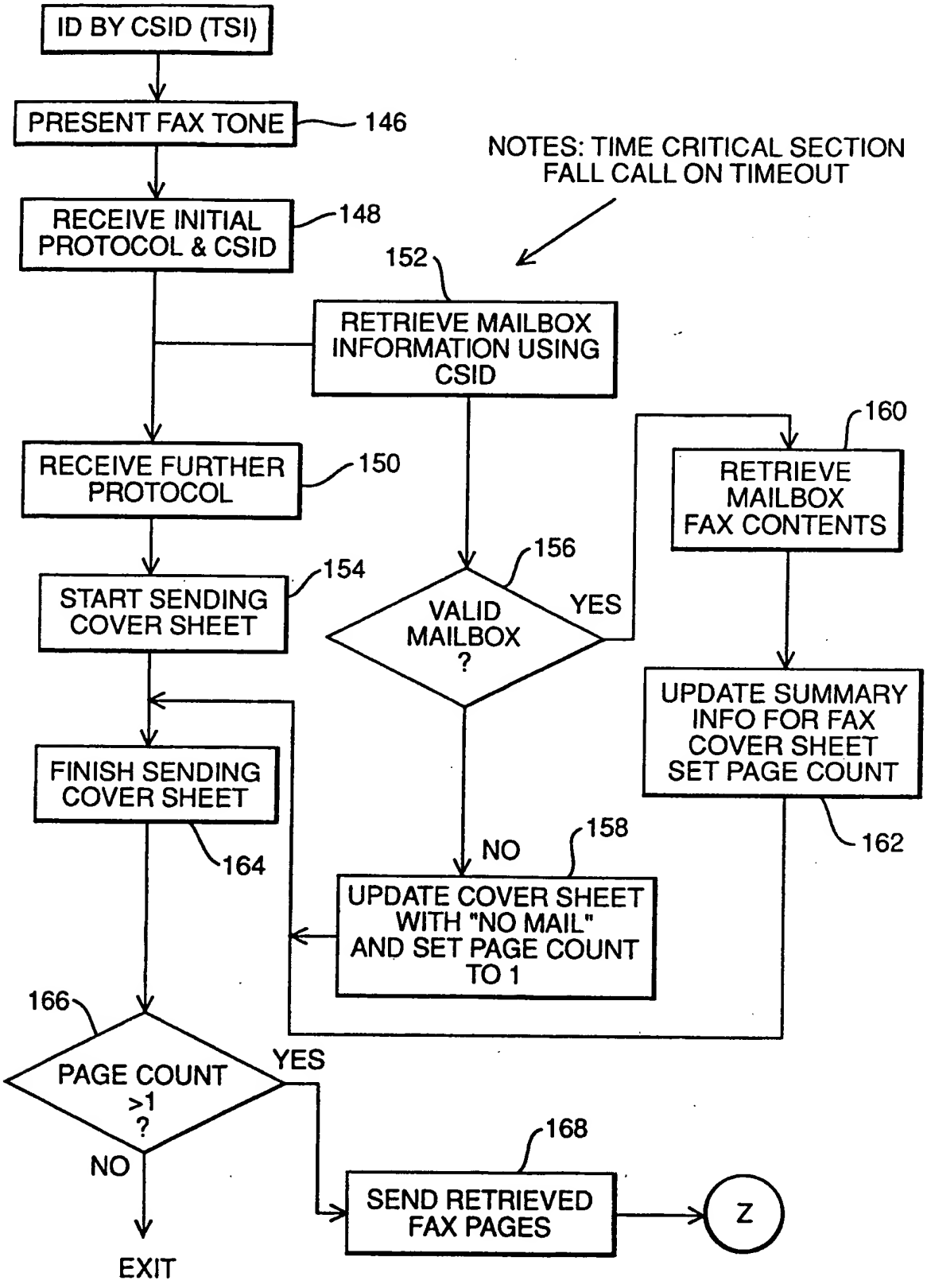
ID BY CSID (TSI)
PRESENT FAX TONE
146
RECEIVE INITIAL PROTOCOL & CSID
148
NOTES: TIME CRITICAL SECTION FALL CALL ON TIMEOUT
152
RETRIEVE MAILBOX INFORMATION USING CSID
RECEIVE FURTHER PROTOCOL
150
START SENDING COVER SHEET
154
VALID MAILBOX ?
156
YES
160
RETRIEVE MAILBOX FAX CONTENTS
UPDATE SUMMARY INFO FOR FAX COVER SHEET SET PAGE COUNT
162
FINISH SENDING COVER SHEET
164
NO
158
UPDATE COVER SHEET WITH "NO MAIL" AND SET PAGE COUNT TO 1
166
PAGE COUNT >1 ?
YES
NO
168
SEND RETRIEVED FAX PAGES
Z
EXIT

FIG. 8

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US94/04353

A. CLASSIFICATION OF SUBJECT MATTER

IPC(5) :H04N 1/00, 1/32; H04M 11/00, 15/00, 1/56, 15/06
US CL :Please See Extra Sheet.
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 358/400, 402, 407, 434, 435, 436, 438, 440, 442; 379/62, 95, 100, 127, 142

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US, A, 4,994,926 (GORDON et al) 19February 1991, col. 5, lines 65-68, col. 6, lines 1-27, col. 13, lines 1-39, and col. 15, lines 51-68.	1, 3-9, 11-14
Y, P	US, A, 5,216,517 (KINOSHITA et al) 01 June 1993, col. 6, lines 18-27, col. 14, lines 1-20, and col. 22, lines 28-39.	1, 3-9, 11-14
Y,P	US, A, 5,257,112 (OKADA) 26 October 1993, col. 5, lines 1-23.	2, 10

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

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"O"	document referring to an oral disclosure, use, exhibition or other means		
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Date of the actual completion of the international search	Date of mailing of the international search report
07 JUNE 1994	AUG 18 1994
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer ALLAN ESPOSO Telephone No. (703) 305-4712

Form PCT/ISA/210 (second sheet)(July 1992)*

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US94/04353

A. CLASSIFICATION OF SUBJECT MATTER:
US CL :

358/400, 402, 407, 434, 435, 436, 438, 440, 442; 379/62, 95, 100, 127, 142

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